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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/883,118	06/26/1997	RAJ RAMANUJAN	17380/1206	4848

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NEW YORK, NY 10004

EXAMINER

RAY, GOPAL C

ART UNIT	PAPER NUMBER
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2111

DATE MAILED: 09/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

08/883,118

Applicant(s)

RAMANUJAN ET AL.

Examiner

Gopal C. Ray

Art Unit

2111

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 1997.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19, 30-35 and 37-39 is/are rejected.
- 7) ☒ Claim(s) 20-29 and 36 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 1990 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner. *draftsperson*
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 2111

1. The instant US Patent Application is a continuation of US Patent Application, 08/047,164, now abandoned. Claims 1-39 are presented for examination.
2. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. Furthermore, all claims should be revised carefully to eliminate all grammatical errors and antecedent basis problems.

3. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

4. Claims 1-19, 30-35 and 37-39 are rejected under 35 U.S.C. § 103 as being unpatentable over US Patent 4,837,682 issued to Culler in view of US Patent 5,168,547 issued to Miller et al. and US Patent 4,991,084 issued to Rodiger et al.

As per claim 1, Culler teaches the claimed:

"a plurality of bus elements ...": Culler's plurality of bus elements ... (See Fig. 6, elements 508, 544, 548, 522 and 528);

"a central unit having a plurality of bus inputs and a plurality of bus outputs":
Culler's central unit having a plurality of bus inputs and a plurality of bus outputs (See Fig 5, element 600); and

"arbitration logic connected to the plurality of bus inputs of the central unit ... for granting each of the bus elements access to the at least one other bus element":
Culler's arbitration logic connected to the plurality of bus inputs of the central unit ... for granting each of the bus elements access to the at least one other bus element (See col. 8, lines 36-42).

The reference of Culler fails to expressly teach the limitations of "a first plurality of uni-directional point-to-point buses ... and a second plurality of uni-directional point to point buses..." (lines 14-20). However, the above feature is well known to one of ordinary skill in the art at the time the invention was made as evidenced by Miller et al. The reference of Miller et al. teaches the above feature in Fig. 9, and col. 24, lines 65-66. It would be obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Culler to implement uni-directional buses because both the prior art system are analogous to access shared resources via arbitration and the above feature of Miller et al. would allow Culler's system to accomplish high speed processing efficiently which is the main objective of any system designer. The reference of Miller et al. teaches the motivation in col. 1, lines 47-53. Furthermore, the reference of Culler fails to expressly teach the limitations of "point-to-point coupling of a particular one of the plurality of bus elements with one other bus element". However, the above feature is well known to one of ordinary skill in the art at the time the invention was made as evidenced by Rodiger et al. The reference of Rodiger et al. teaches the above feature in Fig. 1, elements 51-54. It would be obvious to one of ordinary skill in the data processing art at the time the invention was made to modify the system of

Culler to implement the above feature of Rodiger et al. because both the prior art system are analogous to access shared resources via arbitration and one of ordinary skill in the art at the time the invention was made would have realized that the above feature of Rodiger et al. would allow Culler's system to simultaneously couple data from a plurality of processors to the requested memory modules under arbitration control. The reference of Rodiger et al. teaches that in abstract, lines 4-6. Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Culler using the above features of Miller and Rodiger to obtain the claimed invention.

As per claims 2-4, the limitations of the claims, i.e., "system further includes a state device" (claim 2), use of "OR gate" (claim 3), "multiplexer" (claim 4) do not patentably distinguish over the prior art because these are art recognized equivalents and thus it is a matter of specific engineering choice. The above concept is so well known that no reference is considered necessary. It would have been obvious to use the above components in a computer system such as applicant's because it is well known in the art and within the skill of an ordinary person to use such components alternatively to perform desired functions.

As per claims 5-19, these claims are rejected for similar reasons as discussed in the rejection of claims 2-4.

As per claim 30, this claim is rejected for similar reasons as discussed in the rejection of claim 1.

As per claims 31-32, these claims are rejected for similar reasons as discussed in the rejection of claims 2-4.

As per claim 33, this claim recites a method. The limitations of the claim are parallel to the limitations of apparatus claim 1. Therefore, in teaching the construction

and use of the device the combination of the references of Culler, Miller et al. and Rodiger et al. teaches a corresponding method.

As per claim 34, Culler teaches the claimed:

"wherein the bus elements include a plurality of central processing units and a shared memory": Culler's bus elements include a plurality of central processing units and a shared memory (See Fig. 6).

As per claim 35, Culler teaches the claimed:

"selecting step further comprises selecting between the inputs on the first buses from the central processing unit and the bus from the memory": Culler's selecting inputs from the processors and memory (See col. 8, lines 12-25).

As per claims 37-38, these claims are rejected for similar reasons as discussed in the rejection of claims 2-4.

As per claim 39, Culler teaches the claimed:

"wherein a bus element includes a CPU": Culler's bus element includes a CPU (see Fig. 6, element 544).

5. Dependent claims 20-29 and 36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is an Examiner's Statement of Reasons for Allowance:

Claims 20-29 and 36 are allowable over the cited prior art because each claim recites at least an extra feature in combination with the remaining features in their respective parent claims, such as, "validity logic having as inputs the output of a state device and a control input from the arbitration an arbitration logic for granting port access to the bus system" (claim 20), etc. which the prior art on record does not fairly teach or suggest.

Art Unit: 2111

Any comments considered necessary by applicant must be submitted in response to this office action. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

6. Applicant is reminded of the duty to disclose as set forth in 37 CFR § 1.56. If applicants are aware of any better prior art than those are cited, they are required to bring the prior art to the attention of the examiner.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gopal C. Ray whose telephone number is (703) 305-9647. The examiner can normally be reached on Monday - Friday from 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart, can be reached on (703) 305-4815. The new fax phone number for this Group is (703) 872-9306.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [mark.rinehart@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Application/Control Number: 08/883,118

Page 7

Art Unit: 2111

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to TC2100 receptionist whose telephone number is (703) 305-3900.

Gopal C. Ray
GOPAL C. RAY
PRIMARY EXAMINER
GROUP 2800